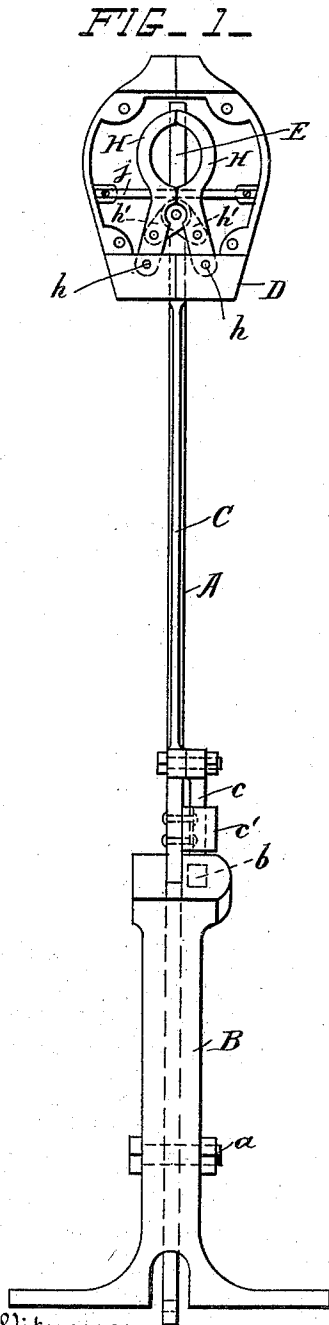


(No Model.)

G. E. HUDGINS.
SWITCH STAND.

No. 488,204.

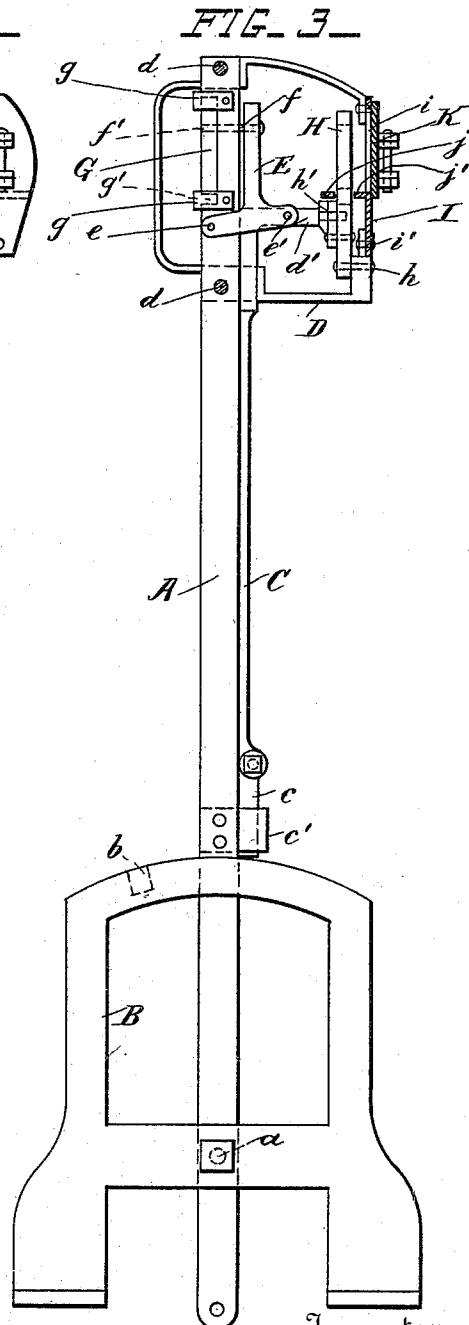
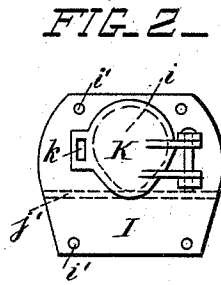
Patented Dec. 20, 1892.



Witnesses

John Bullen

Walter Allen



Inventor

George C. Hudgins

By his Attorney.

Herbert W. T. Jenner.

UNITED STATES PATENT OFFICE.

GEORGE EVANS HUDGINS, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR
OF ONE-HALF TO ROBERT M. ANDERSON AND WILLIAM S. ANDERSON,
OF SAME PLACE.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 488,204, dated December 20, 1892.

Application filed April 25, 1892. Serial No. 430,599. (No model.)

To all whom it may concern:

Be it known that I, GEORGE EVANS HUDGINS, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Switch-Levers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the operating levers of switches used on rail-roads; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed whereby the hand of the operator is manacled to the switch lever when the switch is open, and automatically released when the lever is moved to close the switch.

In the drawings: Figure 1 is a front view of a switch lever, constructed according to this invention, with the cover of the manacle case removed. Fig. 2 is a detail front view of the cover of the manacle case. Fig. 3 is a side view of the switch lever with one half of the manacle case removed.

A is the switch lever pivoted to the stand B by the pin *a*, and adapted to be oscillated to open and close the switch in the usual manner.

C is the trip rod having the locking bolt *c* pivoted to its lower end. This bolt slides in the guide *c'* secured to the lever A, and is adapted to engage with the hole *b* in the stand when the switch is closed.

D is the manacle case, preferably formed of two similar halves, and bolted to the top of the lever A by the bolts *d*. The upper part of the trip rod is guided by the lower edge of the case D, and is provided with a horizontal arm *d'* inside the case.

E is the catch lever pivoted to the lever A by the pin *e*, and to the arm *d'* by the pin *e'*, so that when the catch lever is pressed backward the rod C and bolt *c* are raised to permit the switch lever to be operated.

The catch lever E is provided with a catch pin *f* at its upper end, and this pin passes through a hole in the lever A and enters a hole *f'* in the block G.

The block G slides vertically in the guides

g at the back of the switch lever, and is arranged in the space *g'* cut in the lever, so that it may have a limited vertical motion.

H are the jaws of the manacle, pivoted on the pins *h* at the front part of the case D. The jaws H are pivotally connected to the end of the said arm *d'* by the links *h'*.

I is the cover of the manacle case, provided with the hand hole *i* and secured to the case by the bolts *i'*. The jaws of the manacle slide between the guide bar *j* secured to the case, and the rib *j'* on the cover I.

K is a door hinged to the cover I over the hand hole, and provided with any approved form of lock adapted to be opened by inserting a key in the key-hole *k*.

When the switchman wants to open the switch, he first unlocks and opens the door K, and inserts his hand through the hand hole, and passes it through the jaws of the manacle, the said jaws being then wide apart. The switchman reaches around the block G with his fingers and grasps the upper part of the catch lever E with his thumb. He then raises the block G with his fingers until the hole *f'* is opposite the end of the catch pin, and presses the catch lever E backward so that the catch pin enters the hole *f'*. This motion of the lever E raises the trip rod C, and closes the jaws of the manacle upon the wrist of the switchman, at the same time raising the locking bolt *c* out of its hole in the stand. The drawings show the parts in this position.

The lever A can be oscillated back and forth to open and close the switch, but the switchman cannot release his wrist from the grasp of the jaws of the manacle without first restoring the lever A to its original position, thereby closing the switch, and permitting the locking bolt to drop into its hole in the stand.

When the trip rod, and the parts connected to it, descends by gravity, the jaws of the manacle are re-opened, and the locking pin is withdrawn from the hole in the block G. The block G then falls by gravity, and the switchman draws back his hand through the hand hole.

The block G prevents the catch lever E from being pressed back by inserting a stick

through the hand hole without first raising the block with the fingers and bringing the hole *f'* into line with the catch pin.

This device is adapted to prevent the switch from being accidentally left open, and it is impossible for the switchman to free himself from the switch lever without first closing the switch.

What I claim is:

10 1. The combination, with an oscillatory switch lever provided with a locking device, of a catch lever pivoted to the switch lever and adapted to operate the locking device, and a manacle supported by the free end of
15 the switch lever and operatively connected with the said catch lever and adapted to seize the wrist of the operator when the locking device is moved to release the switch lever, substantially as set forth.

20 2. The combination, with a switch lever provided with a locking device, of a trip rod provided with a horizontal arm at its upper end and adapted to operate the locking device, a catch lever pivoted to the switch lever
25 and to the said arm, and a manacle supported in front of the catch lever and adapted to be closed by the said arm when the catch lever is pushed back, substantially as and for the purpose set forth.

30 3. The combination, with a switch lever, and a catch lever pivoted to it and adapted to release it when pressed back, of a manacle supported in front of the catch lever and adapted to grasp the wrist of the operator
35 automatically when the catch lever is pressed back, a block sliding in guides at the rear of the switch lever, and a catch pin secured to the catch lever and adapted to prevent the catch lever from being pushed back until the
40 hand of the operator has been thrust through the manacle far enough to grasp the said block and slide it clear of the catch pin, substantially as set forth.

45 4. The combination, with a switch lever provided with a locking device, of a case se-

cured to the upper end of the said lever and provided with a hand hole, a trip rod provided with a horizontal arm inside the case and adapted to operate the locking device, a catch lever pivoted to the switch lever and to
50 the said arm, the manacle jaws pivoted to the said case between the hand hole and the catch lever, and links pivotally connecting the manacle jaws with the end of the said arm, whereby the manacle jaws are closed when
55 the catch lever is pressed back, substantially as set forth.

5. The combination, with a switch lever provided with a locking device, of a case secured to the upper end of the said lever and
60 provided at its front with a hand hole, a trip rod provided with a horizontal arm inside the case and adapted to operate the said locking device, a catch lever pivoted to the switch lever and to the said arm, a block sliding in
65 guides at the back of the switch lever, a catch pin projecting from the catch lever and adapted to enter a hole in the said block when the block is raised, the manacle jaws pivoted to the said case in front of the catch lever, and
70 the links pivotally connecting the manacle jaws with the end of the said arm, substantially as and for the purpose set forth.

6. The combination, with a switch lever provided with a locking device, and a catch
75 lever for releasing the said device, of a case secured to the switch lever and inclosing the said catch lever, the manacle jaws pivoted at their lower ends to the case and adapted to close automatically when the catch lever is
80 pushed back, and horizontal guides carried by the case and adapted to support the said jaws, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE EVANS HUDGINS.

Witnesses:

H. M. MAGWOOD,
E. K. WARD.